97

LIBRARY
RECEIVED
★ NOV 14 1936 ★
U. S. Department of Agriculture

THE PLANT DISEASE REPORTER

Issued By

Division of Mycology and Disease Survey

November 1, 1936.

Volume XX Number 19

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

THE PLANT DISEASE REPORTER

Issued by

THE PLANT DISEASE SURVEY

DIVISION OF MYCOLOGY AND DISEASE SURVEY

Vol. XX November 1, 1936 Number 19

IN THIS ISSUE

R. J. Hastings and J. E. Bosher describe symptoms that make the detection of the bulb nematode in iris bulbs easier, page 300.

Donald Folsom reports pea scab from Maine, page 301.

According to C. M. Haenseler asparagus rust is unusually prevalent in New Jersey this year, page 301.

E. F. Guba contributes some notes on diseases of vegetables and ornamental plants in Massachusetts, page 302.

Diseases on peach and apple in Massachusetts are reported by O. C. Boyd, page 304.

A statement on the prevalence of wheat nematode in southern States is quoted from the Cereal Courier, page 305.

Name of the wheat scab fungus, page 305.

M. T. Hilborn and F. H. Steinmetz list some wood-inhabiting fungi found in Maine, page 306.

DETECTION OF ANGUILLULINA DIPSACI IN BULBOUS IRIS

R. J. Hastings and J. E. Bosher

The detection of Anguillulina dipsaci (Kühn) Goodey in bulbous iris is of importance in the study of the pest. Up to the present time no specific symptoms have been seen or described on the plant except in the outer fleshy scales of the bulbs. Diagnosis for A. dipsaci has been limited to examination of the bulbs for symptoms of infection and microscopic examination of the affected tissue to confirm the presence of the pest.

The symptoms of infection on the bulb scales have been described as yellow spots or streaks that start from the side surface, but we have found that yellow or grey streaks emanating from the basal plate appear to be more common and specific symptoms of infection by A. dipsaci than are the lesions that start from the side surface, and furthermore, these characteristic streaks may be seen by turning back the tunic only about one centimeter from the base instead of completely removing the tunic to reveal the lesions on the side. However, our recent studies have shown that the tunics of the bulbs may also be infected, and these affected tunics do not show any indications of infection except dark stains, which symptom, unfortunately, may also arise from numerous other causes. Indeed recognition of nematode infection in iris bulbs is so difficult, that it is practically impossible for quarantine officials to sight-pick infested bulbs. This is the opinion recently expressed by Dr. G. Steiner after receiving specimens of bulbs with tunic infection. Similarly, it has also been difficult for workers studying the nematode disease of iris and its control to evaluate the results of their experiments properly.

In the course of studying iris bulb treatment by immersion in chemicals, the writers have found that infection of the plants was frequently found in the stem, especially in that portion joined to the basal plate and extending only about one inch, and enclosed by the tunic of the original bulb.

Such stems usually have yellow, grey, or black streaky discoloration, which may extend into the basal plate where it spreads around and into the new bulbs attached thereto. The discolored tissue when teased out in water in a watch glass and examined under a microscope will usually reveal the presence of Anguillulina dipsaci.

In these studies, Imperator plants that had only just matured were dug on July 31 and examined on August 3. The bulbs when planted were estimated to be 20 percent infected. The infection in the planting as determined by stem and basal examination was 46 percent but only a few of

the bulbs proper were infected at this time. As determined by the streak symptoms on the bulbs the infestation would not exceed 3 percent, but actually as determined by microscopic examinations about 6 percent of the bulbs were infected. Those which did not have the streak symptoms were recognized by dark grey stains in the basal plate when detached from the original bulb.

In every case, the infection seen in the new bulbs originated in the basal plate of the parent bulb, which may have been infected before planting or have become infected by entrance of nematodes from the soil into the stem, these working their way into the basal plate. (Dominion Laboratory of Plant Pathology, Saanichton, B. C.).

SCAB OF PEAS FOUND IN MAINE

Donald Folsom

On September 9, 1936 spots caused by Cladosporium pisicolum Snyder were found on immature peas in an apparently healthy pod, sent in re aphid injury. Culture transfers were sent to William C. Snyder of the University of California who confirmed the identification. (Maine Agricultural Experiment Station, October 23).

ASPARAGUS RUST PREVALENT IN NEW JERSEY THIS YEAR

C. M. Haenseler

Asparagus rust (Puccinia asparagi) has been very prevalent in 1936 and according to many old growers is more severe than it has been since the introduction of the Washington strains. Rust is present in small amounts each year on old asparagus fields but this year serious damage has occurred on both old brush and on seedlings. In some cases the seedlings were completely devoid of green parts before the first frost.

The very severe cases of rust observed occurred on varieties that were supposedly strains of the Washington variety. In one case a fourteen-year-old planting which the grower stated was from stock obtained directly from Dr. Norton showed about the same amount of rust as other fields. Likewise, some seedlings which were reported as being not more than one or two generations removed from the original Washington strains introduced into New Jersey many years ago, have been very severely attacked. (New Jersey Agricultural Experiment Station. October 31).

/NOTE: The Survey would be glad to have reports as to whether a similar situation has been observed in other States, in regard to both amount of infection and its occurrence on supposedly resistant strains./

PLANT DISEASE NOTES FROM MASSACHUSETTS

E. F. Guba

Vegetable Crops

CUCUMBER crops under glass suffered immensely from powdery mildew (Erysiphe cichoracearum DC.) which caused most damage in May and June. The disease could not be controlled satisfactorily with fungicides without serious damage to the health and vigor of the vines. As a result of the serious nature of the disease, spring crops of greenhouse cucumbers were of unusually short duration.

LETTUCE AND CARROT. Aster yellows virus completely destroyed a planting of lettuce and caused a 50 percent loss of carrots nearby in the same field in a Lexington market garden (September 23). Spinach, a reported susceptible host, growing between the lettuce and carrots was unharmed. The leafhopper population was most dense on the lettuce. In view of the lettuce shortage on the Boston market resulting from the strike of lettuce growers in California, the loss reached $2,000.

TOMATO leaf mold (Cladosporium fulvum Cke.) was serious as usual, appearing on the spring crop in discouraging proportions in early April. It is now general on the fall planting. The first serious case of leaf spot (Septoria lycopersici Speg.) causing destruction of the leaves from the ground up was observed in a greenhouse range at Tewksbury. Infection was traced to an epiphytotic of the disease on plants in the frame outside, but the serious advance of the disease after planting-in is unusual according to the writer's observations. On the same farm (September 8), the outside crop of tomatoes was completely destroyed by late blight (Phytophthora infestans) and infections on inside tomatoes had reached alarming proportions in one house. Heating was immediately begun to check it. Late blight also destroyed tomatoes in a small garden at Waltham (September 14). Several severe cases of Verticillium albo-atrum on tomatoes came to our attention. One field was a total failure. The same fungus was serious on snapdragon at Waltham. The usual failures of eggplant as the result of this fungus were common.

Ornamentals

PERENNIAL ASTER, Aster spp. Rust (Coleosporium solidaginis) was observed in propagating houses in a nursery at Boxboro (March 15). The lowermost leaves were infected but no apparent damage was done.

CANDYTUFT, Iberis, in the demonstration gardens at the Waltham Field Station was badly infested with club root (Plasmodiophora brassicae Wor.) in July.

CARNATION, Dianthus caryophyllus. An unnamed pink seedling in a carnation range at Woburn (December 1935) was badly damaged by oedema. The corky spots and brownish discoloration of the sepals and leaves were the cause of much loss and concern to the grower. This is the most serious instance of oedema ever observed by the writer on carnation. It was associated with faulty growing conditions peculiar to one greenhouse in the range. (See also geranium).

CORNFLOWER, Centaurea cyanus. Specimens of this plant badly infested with rust (Puccinia cyani Pass.) were sent from Winthrop early in July.

GERANIUM, Pelargonium sp. Fleshy clusters of buds (embryomas) and stunting of potted geranium plants caused by Bacterium tumefaciens were reported from Norwood (April 10). The embryomas reappeared after removal. The same type of growth, but more leafy and similar to a witches broom, due to the same cause, was reported from Fall River on Dianthus caryophyllus (carnation). This manifestation of crown gall on carnation branches is excellently illustrated by Smith (Bacterial Diseases of Plants, 1920. Fig. 337). Judging from our experience its occurrence on geranium and carnation is rare.

SNAPDRAGON, Antirrhinum majus. A greenhouse crop in Lexington in mid-October was observed to be generally infested with powdery mildew (Oidium sp.). The grower reported the disease of frequent occurrence in past years on snapdragons in his greenhouse. This is the first instance of powdery mildew on snapdragon that has come to the writer's attention and seems to be the first record of the fungus on snapdragon in America according to Dr. Wm. W. Diehl of the Division of Mycology and Disease Survey, U.S.D.A. Dr. Diehl writes that records from Europe give the fungus the names Erysiphe communis, E. cichoracearum, and E. artemisiae. (See also tomato, Verticillium).

SWEET PEA, Lathyrus odoratus. A greenhouse planting at Woburn was a complete failure as the result of root rot caused by Pythium ultimum.

SWEET WILLIAM, Dianthus barbatus. Much loss resulted in home gardens and nurseries in different sections in eastern Massachusetts from stem rot (Corticum vagum Berk. & Curt.). In some of the cultures a Fusarium predominated. Some beds were completely destroyed.

Hail injury

A hail storm in July, local and centering around Woburn, seriously damaged tomatoes and squash especially and caused lighter damage to other vegetable crops and to fruit. The hail stones were as large as walnuts. In many instances the vegetables were torn to shreds. As a result of the damage, some farmers plowed under and replanted the land to other crops.

Diseases on Nantucket Island

Nantucket Island, which is situated in the Atlantic Ocean twenty miles south of Cape Cod and thirty miles southeast of Buzzards Bay, possesses a rich unexplored fungous flora. During the past season rusts on green beans (Uromyces phaseoli typica), on corn (Puccinia sorghi), on timothy (P. graminis), on iris (P. iridis), on Pinus, Aster, and Solidago (Coleosporium solidaginis), and on cultivated mint (Puccinia menthae) were epiphytotic. The severe incidence of rust on green bush beans this season is similar to its occurrence in New Jersey as reported by Dr. Haenseler in the Reporter for October 15, 1936, p. 292. (Massachusetts State Agricultural College Field Station, Waltham).

FRUIT DISEASES IN MASSACHUSETTS THIS YEAR

O. C. Boyd

PEACH DISEASES: Brown rot (Sclerotinia fructicola), on the whole, was not very damaging to the crop this year. There was practically no blossom blight last spring and only slight amount of twig blight even in back-yard trees. The dry weather of July and August held the fruit-infection stage of the disease in check, resulting in very light losses generally to the commercial crop. Late in the season however brown rot developed noticeably on drops. Hence, the usual fall sanitation program of destroying cull fruits should be observed.

Scab (Cladosporium carpophilum) was more noticeable than in some past seasons, particularly in the home orchard. Heavy losses were sustained also, in commercial orchards where protection was inadequate, especially in those with a heavy carryover of twig infection.

Bacterial spot (Bacterium pruni) was of no consequence in commercial plantings, and was scarcely noticeable even in unprotected back-yard trees. Leaf curl (Taphrina deformans) appeared to be about normal in behavior, causing very slight damage except in orchards that did not receive the dormant fungicide.

Spray Burn: Marked injury as usual was observed when one or more early sprays contained lead arsenate, but little or none was observed or reported where the arsenical spray contained zinc sulfate and lime.

Powdery mildew, which ordinarily is of no importance in Massachusetts, became widespread over the college orchard after the late summer rains set in. The heaviest damage appeared in the young, non-bearing orchard where both leaves and twigs were infected.

APPLE SCAB (Venturia inaequalis): It had been predicted that the rain of May 3-4 might not constitute a favorable infection period because it seemed that there was ample time for most growers to apply the pre-pink spray ahead of it. It so happened, however, that the unusually warm period of April 29 to May 3 forced the leaf and bud development so rapidly that it became a serious problem to have the trees fully protected ahead of that prolonged rain. Those who sprayed thoroughly with lime-sulfur on May 2-3 or May 5 were protected; but those who sprayed during April 29 to May 1 inclusive did not secure adequate protection. Neither did growers who were the least faulty in effecting coverage of the trees regardless of the timing.

The outcome of the situation was a severe scab infection of foliage and fruit, particularly on McIntosh, where a spray of lime sulfur was not applied shortly before or immediately after the May 3-4 rain. This crop of

scab did not show up generally until around May 24-26. In spite of one or more emergency sprays of lime-sulfur after the first cover, scab took a heavy toll in many orchards. It had too firm a hold as early fruit infection and top-branch infection to be overcome by even an emergency summer spray program. This merely emphasizes the oft-expressed feeling that the apple grower can not be too careful in the timing and thoroughness of his early sprays. And, the more inoculum he has under his trees, the greater will be his grief in case he does make a slip. (Massachusetts Agricultural Experiment Station).

WHEAT NEMATODE IN VIRGINIA AND OTHER SOUTHERN STATES

(The following statement is quoted from the Cereal Courier 28:161. Oct. 10, 1936.)

On October 2 R. W. Leukel visited a number of mills in Fauquier and Culpeper Counties, Virginia, to obtain a supply of 1936 wheat nematode galls for completing certain studies on reviviscence in and longevity of the causal organism Anguillulin tritici. He also visited a farm near Manassas on which had been found a crop of badly infested wheat in 1934. The farmer, following instructions, had secured a different lot of seed and had sown it on land cropped to corn the previous year. No trace of galls could be found in the threshed wheat. The invariable presence of nematode galls in the screenings examined at a number of mills indicates that the disease is generally prevalent but not very severe. One lot of wheat received at the Warrenton mill in September consisted of about 50 percent galls, according to the miller. This shows that the disease still is causing occasional severe losses on individual farms.

Reports received during the past two summers of the occurrence of this disease in certain counties in North Carolina and Georgia, where it had not been previously observed, indicate that it is still spreading.

NAME OF THE WHEAT SCAB FUNGUS

According to T. Petch (Gibberella saubinetii (Mont.) Sacc. Ann. Mycol. 34: 257-260. 1936) the name Gibberella saubinetii (Mont.) Sacc. is incorrectly applied to the fungus causing scab and seedling blight of wheat and other small grains and ear and stalk rots of corn. He claims that the correct name of this fungus is Gibberella zeae (Schw.) Petch (Sphaeria zeae Schw.), and that the name Gibberella saubinetii (Mont.) Sacc. is a synonym of Gibberella cyanogena (Desm.) Sacc., a common saprophyte on herbaceous and woody stems.

SOME EPIXYLOUS FUNGI OF MAINE

M. T. Hilborn and F. H. Steinmetz

The following wood inhabiting fungi were collected in Maine during the three-year period 1933-1935. The identifications were either made or verified by Dr. L. O. Overholts of the Pennsylvania State College. The footnotes are taken from his correspondence.

1. DAEDALEA CONFRAGOSA (Bolt.) Fr. On Acer rubrum L.
2. DAEDALEA QUERCINA (L.) Fr. On Quercus borealis Michx.
3. DAEDALEA UNICOLOR (Bull.) Fr. On Alnus incana (L.) Moench.
4. FAVOLUS ALVEOLARIS (DC.) Quel. On Quercus alba L.
5. FAVOLUS CANADENSIS Kl. On Quercus borealis Michx.
6. FOMES APPLANATUS (Pers.) Wallr. On Ulmus americana L.
7. FOMES CONCHATUS (Pers.) Gill. On Fagus grandifolia Ehrh.
8. FOMES CONNATUS (Weinm.) Gill. On Betula populifolia Marsh.
9. FOMES FOMENTARIUS (L.) Gill. On Betula alba var. papyrifera (Marsh) Spach.
10. FOMES IGNIARIUS (L.) Gill. On Betula alba var. papyrifera (Marsh) Spach.
11. FOMES NIGRICANS (Fr.) Gill. On Betula alba var. papyrifera (Marsh) Spach.
- a/12. FOMES PINI (Thore) Lloyd. On Pinus strobus L.
13. FOMES PINICOLA (Swartz) Cooke. On Picea rubra (DuRoi) Dietr.
14. FOMES ROSEUS (Alb. & Schw.) Cooke. On Tsuga canadensis (L.) Carr.
15. FOMES SCUTELLATUS (Schw.) Cooke. On Acer rubrum L.
16. FOMES SUBROSEUS (Weir) Overh. On Picea rubra (DuRoi) Dietr.
17. FOMES TENUIS Karst. On Acer saccharum Marsh.

---

a/ First report from Maine.

18. HYDNUM OCHRACEUM (Pers.) Fr. On Fagus grandifolia Ehrh.

19. HYDNUM ZONATUM (Bull.) Fr. On humus.

20. HYMENOCHAETE TABACINA (Fr.) Lev. On Acer rubrum L.

21. IRPEX CINNAMOMEUS Fr. On Alnus incana (L.) Moench.

22. LENZITES BETULINA (L.) Fr. On Populus tremuloides Michx.

23. LENZITES SAEPIARIA (Wulf.) Fr. On Picea canadensis (Mill) BSP

a/ 24. LENZITES TRABEA (Pers.) Fr. On Abies balsamea (L.) Mill.

25. MERULIUS TREMELLOSUS (Schrad.) Fr. On Picea canadensis (Mill) BSP

26. PANUS STIPTICUS Bull. On Acer spicatum Lam.

27. PENIOPHORA CINEREA (Fr.) Cooke. On Pyrus malus L.

28. PHLEBIA STRIGOSA-ZONATA (Schw.) Burt. On Betula populifolia Marsh.

29. POLYPORUS ABIETINUS (Dicks.) Fr. On Picea canadensis (Mill) BSP

30. POLYPORUS ADUSTUS (Willd.) Fr. On Populus deltoides Marsh.

a/ 31. POLYPORUS ALBELLUS Peck. On Acer saccharum Marsh.

32. POLYPORUS BETULINUS (Bull.) Fr. On Betula populifolia Marsh.

33. POLYPORUS BRUMALIS (Pers.) Fr. On Fagus grandifolia Ehrh.

34. POLYPORUS CINNABARINUS (Jacq.) Fr. On Fagus grandifolia Ehrh.

b/ 35. POLYPORUS COMPACTUS Overh. On Quercus borealis Michx.

36. POLYPORUS CONCHIFER (Schw.) Fr. On Ulmus americana L.

a/ 37. POLYPORUS DICHROUS Fr. On Acer saccharum Marsh.

38. POLYPORUS DRYOPHILUS var. VULPINUS (Fr.) Overh. On Prunus serotina Ehrh.

39. POLYPORUS ELEGANS (Bull.) Fr. On Betula lenta L.

---

b/ First report from outside of Pennsylvania.

a/ 40. POLYPORUS FUMOSUS (Pers.) Fr. On Populus grandidentata Michx.

41. POLYPORUS HIRSUTUS (Wulf.) Fr. On Populus tremuloides Michx.

42. POLYPORUS PARGAMENUS Fr. On Acer pennsylvanicum L.

43. POLYPORUS PICIPES Fr. On Populus tremuloides Michx.

44. POLYPORUS RADIATUS (Sow.) Fr. On Betula lenta L.

45. POLYPORUS RESINOSUS (Schrad.) Fr. On Tsuga canadensis (L.) Carr.

46. POLYPORUS SCHWEINITZII Fr. On Pinus strobus L.

47. POLYPORUS SULPHUREUS (Bull.) Fr. On Fraxinus americana L.

48. POLYPORUS TSUGAE (Murr.) Overh. On Tsuga canadensis (L.) Carr.

49. POLYPORUS TULIPIFERAE (Schw.) Overh. On Prunus serotina Ehrh.

a/ 50. POLYPORUS VELUTINUS Fr. On Populus deltoides Marsh.

51. POLYPORUS VERSICOLOR (L.) Fr. On Acer rubrum L.

52. PORIA FERRUGINOSA (Schrad.) Fr. On Betula populifolia Marsh.

a/ 53. PORIA LAEVIGATA Fr. On Betula alba var. papyrifera (Marsh) Spach.

54. PORIA PAPYRACEA Schw. On Thuja occidentalis L.

55. PORIA PRUNICOLA (Murr.) Sacc. and Trott. On Prunus serotina Ehrh.

56. PORIA PUNCTATA Fr. On Populus grandidentata Michx.

57. PORIA SELECTA Karst. On Picea rubra (DuRoi) Dietr.

58. PORIA TSUGINA (Murr.) Sacc. and Trott. On Tsuga canadensis (L.) Carr.

59. PORIA UNDATA Pers. On Abies balsamea (L.) Mill.

60. PORIA VITICOLA Schw. On Acer saccharum Marsh.

61. RADULUM ORBICULARE Fr. On Populus grandidentata Michx.

62. SCHIZOPHYLLUM COMMUNE Fr. On Pyrus malus L.

63. SEPTOBASIDIUM PINICOLA Snell. On Pinus strobus L.

64. STEREUM FASCIATUM Schw. On Alnus incana (L.) Moench.

65. STEREUM FRUSTULOSUM Fr. On Quercus alba L.

66. STEREUM HIRSTUTUM Fr. On Acer spicatum Lam.

67. STEREUM MURRAYI (B. and C.) Burt. On Betula lutea Michx.

c/68. STEREUM PURPUREUM (Pers.) Fr. On Abies balsamea (L.) Mill.

69. STEREUM RAMEALE Schw. On Quercus alba L.

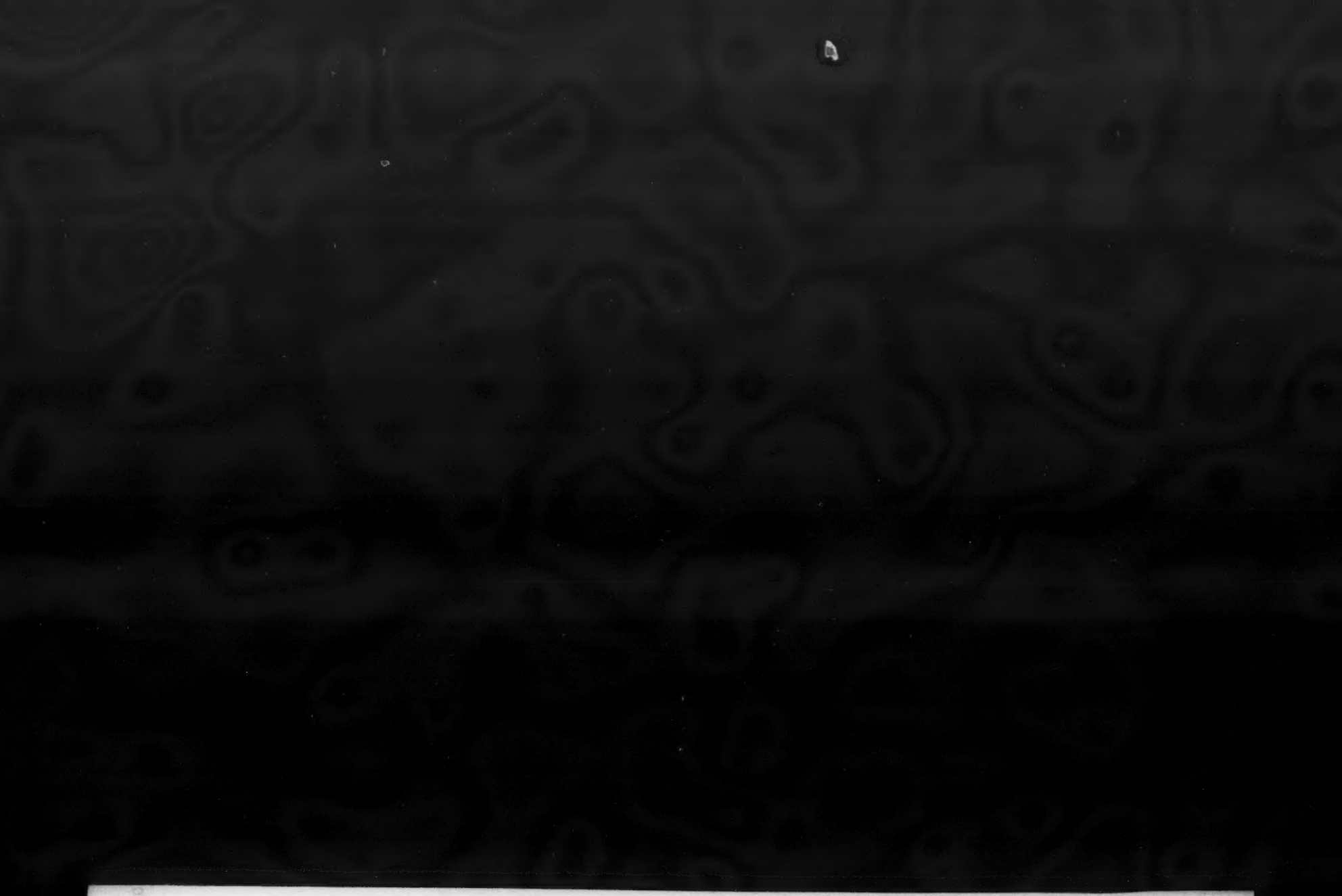
a/70. TRAMETES AMERICANA Overh. On Tsuga canadensis (L.) Carr.

a/71. TRAMETES HETEROMORPHA (Fr.) Lloyd. On Tsuga canadensis (L.) Carr.

72. TRAMETES SERIALIS Fr. On Tsuga canadensis (L.) Carr.

73. TRAMETES SUAVEOLENS (L.) Fr. On Salix alba L.

(Maine Agricultural Experiment Station and Maine College of Agriculture).

---

c/ First report from a coniferous substratum.